FACULTY OF ENGINEERING & TECHNOLOGY

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Topics Covered

Wireless routing protocol (WRP)
Source initiated on -demand protocols
Ad hoc on demand distance vector routing (AODV)

Wireless routing protocol (WRP)

The wireless routing protocol is a proactive unicast routing protocol for MANETs. It uses an enhanced version of the distance vector routing protocol, which uses the Bellman - Ford algorithm to calculate paths.
For the wireless routing protocol (WRP) each node maintains 4 tables:
Distance table
Routing table
Link cost table
Message retransmission list (MRL) table

Each entry in the message retransmission list has a sequence number of the update message, a retransmission counter, an acknowledgment required flag vector with one entry per neighbor, and a list of updates sent in the update message.
When any node receives a hello message from a new node, it adds the new node to its routing table and sends the new node a copy of its routing table. A node must send a message to its neighbors within a certain time to ensure connectivity.

Wireless routing protocol (WRP)

Advantages

The advantage of WRP is similar to DSDV. In addition, it has faster convergence and adds fewer table update

Disadvantage

The complexity of maintenance of multiple tables demands a large amount of memory and greater processing power from nodes in the MANET.
Since it suffers from limited scalability therefore WRP is not suitable for highly dynamic and for a very large ad hoc wireless network.

Source initiated on -demand protocols

Source - initiated on demand routing is **reactive** in nature, unlike table driven routing. This type of protocols generates routes only when a source demands it.

In other words, when a source node requires a route to a destination, the source initiates a route discovery process in the network. This process finishes when a route to the destination has been discovered or all possible routes have been examined without any success.

The discovered route is maintained by a route maintenance procedure, until it is no longer desired or the destination becomes inaccessible.

Ad hoc on demand distance vector routing (AODV)

AODV is a routing protocol for MANETs (mobile ad hoc networks) and other wireless ad hoc networks.
It is a reactive routing protocol; it means it establishes a route to a destination only on demand.
AODV routing is built over the DSDV algorithm. It is a significant improvement over DSDV.
The devices that are not on a particular path do not maintain routing information, nor do they participate in the routing table exchanges.
When a source requires sending a message to a destination and does not have a valid route to the latter, the source initiates a route discovery process.
Source sends a route request (RREQ) packet to all its neighbors, the latter forward the request to all their neighbors, and so on, until either the destination or an intermediate mobile (node) with a "fresh enough" route to the destination is reached.